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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,940	12/30/2003	Bernhard Wessling	HP0039USNA	1912
23906 7590 03/28/2007 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			EXAMINER KOPEC, MARK T	
			ART UNIT 1751	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/28/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/748,940

Applicant(s)

WESSLING ET AL.

Examiner

Mark Kopec

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Applicant's election without traverse of Group I and Species 2 in the reply filed on 01/08/07 is acknowledged. Claims 24-25 are withdrawn from consideration.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Use of a narrow numerical range that falls within a broader range in the same claim may render the claim indefinite when the boundaries of the claim are not discernible. Description of examples and preferences is properly set forth in the specification rather than in a single claim. A narrower range or preferred embodiment may also be set forth in another independent claim or in a dependent claim. If stated in a single claim, examples and preferences lead to confusion over the intended scope of the claim. In those instances where it is not clear whether the claimed narrower range is a limitation, a rejection under 35 U.S.C. 112, second paragraph should be made.

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In the instant claims, applicant should amend the recited ranges (for weight%, particle size, resistivity, gloss factor, surface roughness, and substrate thickness) to recite a clear range (e.g. --wherein said polyaniline particles have a particle size from 0.5 μm to less than 5.0 μm --). Of course, applicant may add dependent claims reciting narrow ranges for any recited property.

The instant claims are allowable over the prior art of record.

JP 4001070537 discloses films produced from electrolytic polymerized polyaniline having a particle diameter from 0.1-10 μm (Abstract).

Katashima et al (2002/0032271) discloses an antistatic coat comprising sulfonated polyaniline having a particle size from 0.01-1.0 μm (Abstract; para 0004, para 0050).

The references do not disclose or fairly suggest the instantly claimed "polyimide component", nor the recited resistivity, surface gloss and surface roughness values.

Goodman et al 7,130,569 discloses/claims a transfer belt comprising a homogeneous composition of polyimide and 2-25 wt% polyaniline having a particle size from 0.5-5.0 μm (Abstract; Col 7, lines 16-29; Col 8, lines 35-40; claims 1-15). The reference is not available as prior art.

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Once the instant claims are allowable, a decision on interference proceedings can be determined. See 37 C.F.R. §41.102 and MPEP 2303 and 2304.04.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Kopec whose telephone number is (571) 272-1319. The examiner can normally be reached on Monday - Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Mark Kopec
Primary Examiner
Art Unit 1751

MK
March 26, 2007

COMPARATIVE EXAMPLES 1 - 2

In the following COMPARATIVE EXAMPLES, 805 lbs. of dimethylacetamide was charged to a 200-gallon kinetic dispersion, milling machine. Next, 16.9 lbs. of 85 percent aqueous phosphoric acid (dopant) was added. Over 30 minutes, 52.5 pounds of polyaniline powder in the ES salt form was added and then additionally dispersed for 30 minutes.

After milling, the slurry was tested to determine the average particle size of the slurry. In these COMPARATIVE EXAMPLES, the average particle size of the polyaniline slurry was between 8 to 10 microns depending on the sample taken and the time in which the sample was allowed to settle prior to being analyzed. 99.9 % of the measured particles in the slurry were in the range of 18 to 25 microns.

Next, the slurry was circulated through the Netzsch horizontal media mill using diaphragm pump. The particle size coming from the discharge of the media mill was monitored over the next 20 hours until the average particle size of the slurry was about 7.5 microns and 99.9 % of the particles were smaller than 20 microns. The slurry was transferred without any filters.

The following slurry was mixed with polyamic acid, cast and cured in the same manner as the EXAMPLES. The following film data was obtained.

Properties	Comparative Ex. 1	Comparative Ex. 2
Polyaniline Loading (%)	8.1	9.0
Point Thickness (microns)	85.9	80.2
MD/TD Elongation (%)	80.1	65.7
MD/TD Tensile Strength (Kpsi)	17.9	16.55
MD/TD Modulus (Kpsi)	368	385
Gloss Factor	65.7	63.2
Surface Resistivity (1000V) 5 minutes after curing oven	2.49E13	1.82E13
Surface Resistivity (1000V) 24 minutes after curing oven	3.0E12	1.5E12
Roughness (Ra) microns	0.18	0.19

The results of these two COMPARATIVE EXAMPLES illustrate that when the average particle size of the polyaniline filler is about 7.5 microns, the films produced have a lower gloss factor and higher roughness.

COMPARATIVE EXAMPLE 3

The following COMPARATIVE EXAMPLE was using 358.8 (g) of DMAc, 13.38 of 85% aqueous phosphoric acid, and 28.0 grams of

polyaniline powder (ES salt). The three components were milled in a high shear laboratory-milling machine, for 300 minutes, drawing 1.8 kilowatts of power.

5 The viscosity of the slurry, at an average particle size of 1.8
microns, was about 1 poise. The slurry was milled down further to an
average particles size of less than 0.5 microns. As the average particle
size of the slurry decreased to about 0.01 microns, the viscosity of the
slurry dramatically increased. The viscosity at this size range was
measured to be about 2,000 poise. A particle size analysis at this stage
10 revealed that the slurry contained only about 1 to 3 percent of the particles
in the 500 to 1000 micron size range. The physical character of the slurry
resembled a gel, or gelatinous liquid.

A film was produced using the slurry above (the slurry originally
having an initial average particle size of about 0.01 microns). The
15 viscosity of the slurry was so high some additional solvent was added to
mix the slurry with polyamic acid to cast a film. A particle size analysis of
the slurry at this stage showed that 99.9 percent of the particles in this
slurry were smaller than about 534.3 microns and the final diluted viscosity
was about 4,500 poise. COMPARATIVE EXAMPLE 3 produced a
20 polyimide/polyaniline blend film having a Ra roughness number of about
0.89 microns and a gloss factor of about 55.0.